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ABSTRACT

This publication presents 41 statistical tables containing data on education in member countries of the Organisation for Economic Co-operation and Development (OECD). This volume presents international comparative data and is intended for use in the comparative study of educational systems, rather than in the study of education in any one country. The tables are organized into six major sections covering the following topics: scope and duration of formal education, data on students, new entrants to higher education, teachers employed in education, expenditures on education, and educational attainment of the population. (JG)

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EDUCATIONAL STATISTICS YEARBOOK

VOLUME I

INTERNATIONAL TABLES

(Best Copy Available)

EA 007 205

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT
PARIS 1974

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The Organisation for Economic Co-operation and Development (OECD) was set up under a Convention signed in Paris on 14th December, 1960, which provides that the OECD shall promote policies designed :

- *to achieve the highest sustainable economic growth and employment and a rising standard of living in Member countries, while maintaining financial stability, and thus to contribute to the development of the world economy;*
- *to contribute to sound economic expansion in Member as well as non-member countries in the process of economic development;*
- *to contribute to the expansion of world trade on a multilateral, non-discriminatory basis in accordance with international obligations.*

The Members of OECD are Australia, Austria, Belgium, Canada, Denmark, Finland, France, the Federal Republic of Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States.

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Director of Information, OECD
2, rue André-Pascal, 75775 PARIS CEDEX 16, France.

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Introduction

The present document presents a series of basic analytical tables on the educational process in OECD countries. These are intended to be useful for the comparative study of educational systems rather than for purely national purposes. It is in two parts. The first part containing international comparative data is presented here. The second volume consists of data for individual countries and is issued separately. The country annexes give a detailed description of sources and methods used.

This report consists of tables intended to facilitate intercountry comparison and covering all OECD Member countries so far as data availability permits. It is organised in five major sections. The first gives some idea of the scope and duration of the regular system of formal education. The second presents the basic data on enrolments of pupils and students in regular education, The third presents data on teachers, the fourth covers educational finance, and the final section provides information on the educational attainments of those who have terminated their regular education. In addition to the international tables, more detailed data and source notes are provided for each individual country. The international tables are usually for the benchmark years 1960, 1965 and 1970, whereas the country tables show all years from 1965 onwards as well as 1960. The country tables vary somewhat in scope according to the availability of data. The key table for each country is that which shows educational enrolment cross-classified by level and single year of age, for this gives a snapshot picture of the degree of participation in education and the type of education which is received (1). The figures in this volume are adjusted to conform with the OECD Standardised Classification of Educational Systems, and this explains why they differ from previous statistical series on education issued by OECD (2).

OECD work on educational statistics has always been closely geared to the requirements of policy and planning analysis and grew gradually from the 1960 Policy Conference on Economic Growth and Investment in Education and the methodological work which accompanied the country studies of the Mediterranean Regional Project. It led, over the years, to the first systema-

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(1) These tables are a first step towards a system of educational and demographic accounting on the lines developed by Professor Richard Stone Demographic Accounting and Model Building, OECD, Paris, 1971, and An Educational Matrix for the Netherlands in 1967, Netherlands Central Bureau of Statistics.

(2) See, for example: Statistics of the Occupational and Educational Structure of the Labour Force in 53 Countries, OECD, 1969; Development of Secondary Education, OECD, Paris, 1969; Development of Higher Education 1950-67, Statistical Survey, OECD, Paris, 1970; Educational Expansion in OECD Countries since 1950, OECD, Paris, 1971; Quantitative Trends in Teaching Staff in Higher Education, OECD, Paris 1971; and the national case studies of the Study on Teachers. As an example of earlier statistical series issued by the Organisation see: Resources of Scientific and Technical Personnel in the OECD area, OECD Paris, 1963.

tic attempt to set out a comprehensive framework of the statistical implications of recent developments in the theory and practice of educational planning which was presented with the publication in 1967 of the OECD handbook on Methods and Statistical Needs for Educational Planning (referred to hereafter as the OECD Handbook).

The Handbook discussed various methodological approaches to educational planning and out of this discussion a series of tabulations was derived which it was recommended should be available to educational planners on a regular basis. In essence, the Handbook was concerned with those statistics which are required to project or to plan, in the medium and the long term, the main magnitudes in the educational system - pupils, graduates, teachers, buildings, costs, expenditures. It was also concerned with the main quantifiable attributes of these basic magnitudes which are relevant for long- and medium-term decision making, i.e. number of pupils in each of the broad areas of specialisation; certain social and economic characteristics of the pupils; sex, age, qualifications and other attributes of teachers; and the analysis of expenditures, according to branch of education, purpose and source of finance. The Handbook also considered the utility of international comparisons to national educational planners and made proposals for the collection of data from which a wide range of such comparisons could be made.

For such international comparisons to be meaningfully undertaken it was first necessary to develop a classification system and a set of definitions applicable and acceptable to all Member countries. The Handbook provided the basic analytical framework and rationale for such a classification; it was in fact one of the conclusions of the Handbook that there was a need to establish a "conversion key for all OECD Member countries so that published national data can be readily converted on the basis of the standardised system".

The preparation of this "conversion key" resulted in publication by OECD of the Classification of Educational Systems (1) which shows in detail how the various parts of each national educational system relate to the reference frame in the Handbook, provides the indispensable basis for international comparability of educational statistics, by level and type of education. The summary volume of this publication explains the criteria used in classification.

(1) Classification of Educational Systems
- Finland, Germany, Japan, OECD, Paris 1972;
- Netherlands, Sweden, Turkey, OECD, Paris 1972;
- Belgium, Denmark, United States, OECD, Paris 1973;
- France, Norway, Spain, OECD, Paris, 1973;
- United Kingdom, OECD, Paris 1973;
- Austria, Ireland, Italy, OECD, Paris, 1973;
- Canada, Greece, Yugoslavia, OECD, Paris, 1973.

Both the Handbook and the Classification system were designed to provide a basis for measuring and describing the behaviour of the educational system; they were not explicitly concerned with measures of educational output or performance in relation to given objectives. In 1973, OECD issued a reappraisal of the possibilities for articulate description of educational performance in A Framework for Educational Indicators to Guide Government Decisions (hereafter referred to as the "Framework"). This was a short document which took a broad view of the educational process, its repercussions on the economy and society, the nature of the "outputs" the educational system produces and the factors which contribute to output. It was partly a response to the interest which governments began to show in more rational and explicit accounting in the public sector in the 1960s (pioneered by PPBS system in the U.S.A.) (1), partly to the general feeling since the widespread student disturbances of 1968 that social goals need re-examination, partly to the express request of the OECD Ministerial Council that OECD should elaborate a set of social indicators for society in general, and also in response to the request of the Conference on Policies for Educational Growth for better indicators for education (2).

The Framework was not limited by considerations of measurement feasibility but explored all indicators of potential methodological interest in the light of modern interpretations of the role of education. It suggested six major headings of policy importance in which indicators should be developed and made tentative suggestions concerning 46 potential indicators. The major headings are: the contribution of education to the transmission of knowledge, the contribution of education to individual development, the contribution of education to the transmission and evolution of values, and finally, the effective use of resources in pursuit of the above policy objectives.

The present document contains comparable inter-country statistics, which are inspired both by the Framework and the Handbook. It includes traditional basic statistics on enrolments, teachers, and costs for people still in the education system as well as census data on levels of educational attainment of the population and their distribution between persons, generations and sexes. An effort has been made to make the data as comparable as possible and substantial adjustments to national figures were necessary to achieve this. The present volume concentrates on the regular sequence of education for childhood and youth (including higher education). Adult education is not included as comparable data in this field are not yet available. The classification criteria are those set out in the OECD Classification of Educational Systems. In further work it is hoped to provide some

(1) See Commissariat Général au Plan, Recherches sur les indicateurs sociaux, S.E.D.E.I.S., Paris, 1971, Economic Council of Canada, Design for Decision-Making, Ottawa, September, 1971; Towards a Social Report, U.S. Department of Health, Education and Welfare, Washington D.C., 1969.

(2) See Educational Policies for the 1970s, OECD, Paris 1971

quantitative estimates of adult education activity and also to try to implement some of the ambitious recommendations in the Framework. Of the 46 indicators proposed in the Framework very few are covered in the present document. It may be possible to make half of the 46 indicators operationally feasible in time, but 20 of them (1) are probably too complicated to be operationally feasible or they involve such a large degree of data cross-classification that the results can only be significant on the national rather than the international level.

(1) i.e. indicators vi, ix, xi, xiii, xvi-xx, xxii, xxiii, xxv, xxvii, xxix, xxxii, xxxiv, xxxviii-xxxxi.

PART I

INTERNATIONAL TABLES

In the following tables, the data on enrolments and teachers refer to academic years beginning in the year cited, i.e. when 1970 is cited it refers to data for the academic year starting in the Autumn of 1970. In the case of Australia, however, the data refer to calendar years.

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I. Scope and Duration of Formal Education (Tables 1-3)

The education systems of OECD countries vary a good deal in the age at which pupils enter and leave and the duration of their stay at any particular level. Age of compulsory entry to formal education begins earliest in the U.K. at 5 years and latest in Scandinavia and Turkey at 7 years. Compulsory enrolment ends in Greece at 11½ whereas in several countries the age is now 16 and in some U.S. states it is as high as 18. The average duration of compulsory education in OECD countries is therefore about 9 years. The situation is shown in table 1.

However, there are substantial public facilities for education atpre-compulsory and post-compulsory level, and the average duration of education from initial entry to the end of the formal phase is more than 11 years in OECD countries. The individual country situation is shown in Tables 2 and 3.

In future, the OECD Secretariat hopes to present estimates of the average duration of adult education, but the statistical basis for this is, at present, too weak.

The biggest variation between countries in the length of study occurs in higher education, where the typical duration of university study varies from an average of something under 4 years in the U.K. to 7 years in the Netherlands (1). To some extent this variance reflects differences in the level of first degrees awarded, but it also reflects different practices as to the intensity of study, frequency of part-time work amongst students etc.

It is not possible to provide a summary picture of educational participation cross-classified by age and level of study, but this information can be gleaned in snapshot form in the matrix tables presented for individual countries.

(1) See Development of Higher Education, Analytical Report, OECD, Paris 1971, p.182.

Table 1

Age at which Compulsory Education Begins and Ends [a]

(Situation at beginning of 1974)

	Begins on Reaching Age:	Terminates On Reaching Age:	Duration (in years)
Australia	6	15-16	9-10
Austria	6	15	9
Belgium	6	14	8
Canada	6	15-16	9-10
Denmark[b]	7	16	9
Finland	7	16	8-9
France	6	16	10
Germany	6	15[c]	9
Greece	5½	11½	6
Iceland	7	15	8
Ireland[b]	6	15	9
Italy	6	14	8
Japan	6	15	9
Luxembourg	6	15	9
Netherlands	6	15	9
Norway	7	16	9
Portugal	6	14	8
Spain	6	14	8
Sweden	7	16	9
Switzerland	6-7	14-16	8-9[d]
Turkey	7	12	5
U.K.[b]	5	16	11
U.S.A.	7	16[a]	10[e]
Yugoslavia	7	15	8

a In some countries the leaving age is not uniform for the country as a whole, and in these cases an age range is shown. In the U.S.A. the leaving age also varies between states but 16 is the most common leaving age.

b The rise in leaving age occurred in 1972 (from 14 to 15 in Ireland from 14 to 16 in Denmark and from 15 to 16 in the United Kingdom).

c In Germany part-time education is compulsory until age 18.

d In some communes, ten years are compulsory.

e Full-time compulsory education ends after completion of ten years schooling.

Table 2

Average Age of Entry into and Exit from Education

		Average Age of Entry into Schooling	Average Age of Exit from Regular Education
Australia	1971	4.8	n.a.
Austria	1969	5.2	16.8
Belgium	1966	3.2	17.7
Canada	1968	5.7	18.5
Denmark	1970	6.4	17.8
Finland	1967	6.7	18.1
France	1970	3.5	17.8
Germany	1969	5.2	16.6
Greece	1968	5.9	n.a.
Iceland		n.a.	n.a.
Ireland	1971	4.4	17.2
Italy	1966	5.5	15.6
Japan	1970	5.0	(18.2)
Luxembourg	1970	4.4	16.6
Netherlands	1970	4.2	17.7
Norway	1970	6.8	18.9
Portugal	1970	6.7	15.0
Spain	1970	4.6	16.0
Sweden	1972	5.8	18.7
Switzerland	1970	5.4	17.5
Turkey		n.a.	n.a.
U.K.	1970	4.7	17.0
U.S.A.	1970	4.7	19.5
Yugoslavia	1968	6.5	16.7

Source: Derived from Table 3. The first column in table 2 is derived from the first column of table 3 which shows the number of years of education before attainment of the seventh birthday. Column 2 of table 2 is derived by adding the total number of years of education received (last column of table 3) to the average starting age (column 1 of table 2).

Table 3

Average Years of Full-Time education Received Per Head of Population in Age Groups Cited And Average Total Expectation of Education around 1970

		Average Years of Education received between ages:				
		3-6	7-14	15-18	19-25	Total 3-25
Australia	1971	2.2	8.0	2.0	n.a.	n.a.
Austria	1969	1.8[a]	8.0	1.3	0.5	11.6
Belgium	1966	3.8	7.8	2.2	0.7[b]	14.5
Canada	1968	1.3	7.8	2.9	0.8	12.8
Denmark	1970	0.6	7.8	2.1	0.9	11.4
Finland	1967	0.3	7.9	1.9	1.3[c]	11.4
France	1970	3.5	7.9	2.2	0.7	14.3
Germany	1969	1.8[a]	7.8	1.2[c]	0.6	11.4
Greece	1968	1.1	7.0	1.6	n.a.	n.a.
Ireland	1971	2.6	7.8	1.9	0.5	12.8
Italy	1966	1.5	7.0	1.2	0.4[b]	10.1
Japan	1970	(2.0)	(8.0)	(2.7)	(0.5)	(13.2)
Luxembourg	1970	2.6	7.5	1.5	0.6	12.2
Netherlands	1970	2.8	7.9	2.1	0.7	13.5
Norway	1970	(0.2)	7.9	2.8[d]	1.2[b]	12.1
Portugal	1970	(0.3)	6.5	0.9	0.6	8.3
Spain	1970	2.2	7.2	1.1	0.7	11.2
Sweden	1972	1.2[a]	7.9	2.7	1.1	12.9
Switzerland	1970	(1.6)	7.7	2.5	0.3.	12.1
Turkey	1968	n.a.	6.1	(0.8)	n.a.	n.a.
U.K.	1970	2.3	8.0	1.6	0.4[b]	12.3
U.S.A.	1970	2.3	7.9	3.3[e]	1.3[e]	14.8
Yugoslavia	1968	(0.5)	6.9	1.5	1.3	10.2

N.B. In many cases education in special schools for handicapped children is excluded.

a 1970
b 19-24
c Excludes part-time compulsory vocational schools
d Includes a very small number of part-time pupils
e Full and part-time
( ) Estimates

Source: This table is derived from tables 14-17 on enrolment ratios e.g. for Australia table 14 shows 55 per cent enrolment for the four years of age 3-6, 55 per cent of four is 2.2 years, as shown above for Australians aged 3-6.

II. Data on Pupils and Students Undergoing Education (Tables 4-20)

(a) Enrolments (Tables 4-13)

These figures are the traditional basic indicator of educational activity. The present figures refer to regular education and do not include adult education which is as yet very inadequately covered in the education statistics of most countries.

The figures in tables 4-13 are classified by level (pre-primary, primary, secondary, university higher and non-university higher) according to the OECD standardised classification which is sometimes substantially different from that used in some national classifications. For instance, the OECD classification treats the first six grades of U.S. elementary education as primary, whereas U.S. tabulations often treat the first 8 grades as primary education. In other countries the OECD system is virtually identical with that of the country concerned, e.g. Japan. For detailed reference the reader is referred to the OECD Standardised Classification of Educational Systems, particularly the summary volume, and to the country notes in this document which indicate the exact coverage of the figures in terms of the OECD nomenclature, and the sources used.

The following tables show full-time and total pupils separately, and it is hoped in future to get sufficient data to show part-time students on a full-time equivalent basis and to show a breakdown of enrolment in public and private institutions. However, the duration of full-time education varies between countries, both in terms of instruction hours, free study periods at school and amount of homework, so that comparisons of enrolment figures between countries will for some time remain rather rough as indicators of national educational effort.

In principle, the distinction between full and part-time pupils is based on the programmes for which they are enrolled and according to whether they are organised on a full-time or part-time basis; for example, a student enrolled in a full-time university programme will be considered as a full-time student even if he attends courses only part of the time or even, in the extreme case, not at all. It is also essential to know the full-time equivalents of part-time students. Ideally, these equivalents should be calculated by dividing the number of programme hours (defined here as hours spent in activities - courses, seminars, class work, etc. - requiring control or supervision by a teacher) for a part-time student by the average number of programme hours for a full-time student. For instance, if for a given programme organised on both a full-time and a part-time basis, a full-time student is expected to do 30 hours per week and if there are fifty part-time students

receiving in total 300 hours of instruction, the full-time equivalent of these students will be:

$$\frac{300}{30} = 10 \text{ full-time students.}$$

The strict application of this method of calculation is justified by the fact that teacher requirements and expenditure are determined by the number of course hours and not by attendance at courses or number of students.

In the standardised OECD classification young people engaged in part-time vocational training on completion of full-time compulsory schooling (Berufsschulen in Germany for example) and apprentices with a certain number of compulsory courses per week are considered to fall within the "regular" part-time system.

(b) Enrolment Rates (Tables 14-17)

In order to facilitate inter-country or intertemporal comparisons, it is normal practice to establish ratios relating enrolment to population. As a first step in analysis, this procedure is obviously useful, because comparisons in absolute terms have limited significance between countries with widely different populations, or differing rates of population growth.

The figures in Tables 14-17 provide an indicator of the coverage of educational activity in 1970. Table 14 shows enrolment rates for children aged 3-6 without specifying whether the pupils are full-time or part-time. The situation varies a good deal within and between countries and most children in pre-primary education attend school for shorter hours than those in primary education. Table 14 does however include some primary education in countries where compulsory schooling starts at age 6 or 7. Table 15 covers children in the compulsory age group where full-time attendance is virtually complete except in Greece, Italy, Portugal, Spain, Turkey and Yugoslavia. Tables 17 and 18 show the growth of education and of population by level of education.

(c) Growth in Population, Enrolment and Enrolment Rates (Tables 18-20)

Table 18 shows growth of population in the relevant age groups by level of population, table 19 shows growth in enrolments by level and table 20 shows the rate of growth of enrolment rates, i.e. growth of enrolment after eliminating the demographic effect.

Table 4

Enrolment in Pre-Primary Education 1960-1970

000s

	1960	1965	1970
Australia	n.a.	n.a.	77.5
Austria	79.7	n.a.	120.4
Belgium	405.1	443.2	457.1
Canada	(182.0)	267.8	400.1
Denmark	n.a.	3.0	20.9
Finland	n.a.	n.a.	25.5
France	1,374.1	1,778.4	2,213.3
Germany	n.a.	9.7.	47.1[a]
Greece	40.2	52.3	87.1
Iceland	n.a.	n.a.	n.a.
Ireland	144.4	113.8	125.5
Italy	1,154.1	1,335.0	1,586.8
Japan	742.4	1,137.7	1,674.6
Luxembourg	4.8	5.8	7.9
Netherlands	397.8	457.1	491.7
Norway	n.a.	n.a.	n.a.
Portugal	6.5	11.3	17.1
Spain	(525.0)	610.6	819.9
Sweden b	48.6	64.0	111.4
Switzerland	(90.0) c	n.a.	(140.0)d
Turkey	2.7	3.3	8.2
U.K.	n.a.	247.7	302.0
U.S.A.	n.a.	3,577.0	4,279.0
Yugoslavia	n.a.	n.a.	n.a.

a 1971
b Excluding children younger than 3
c 1961
d 1969

( ) Estimates

Note: The data on preprimary education include both full-time and part-time pupils wherever possible, but the degree of coverage varies between countries. These figures are not therefore very useful for international comparisons of levels of pre-primary education, but they are useful in showing differences in trends between countries.

Table 5

Enrolment in Primary Education 1960-1970

000s

	1960	1965	1970
Australia	1,564.0	1,664.0	1,812.0
Austria	398.8	471.4	531.9
Belgium	918.8	979.6	996.2
Canada a	2,558.6	2,848.6	2,903.6
Denmark	n.a.	363.1	372.2
Finland	547.0	463.0	389.0
France	4,915.4	4,867.2	4,799.0
Germany	3,152.1	3,498.1	3,642.7 b
Greece	921.3	975.9	914.2
Iceland	(23.0)	25.0	(30.0)
Ireland	358.8	386.4	394.6
Italy	4,339.5	4,480.2	4,840.8
Japan	12,590.7	9,775.5	9,493.5
Luxembourg	28.0	31.1	32.1
Netherlands	1,415.7	1,409.0	1,462.4
Norway	429.7	412.1	385.6
Portugal	886.3	891.7	929.0
Spain	(2,344.2)	(2,728.6)	3,216.4
Sweden a	738.2	656.4	650.4
Switzerland	577.1c	580.1 d	612.0b
Turkey	2,866.5	3 933.2	5,013.4
U.K.	(4,982.3)	5,210.9 e	5,850.0
U.S.A.	23,041.0 f	25,548.0	25,486.0
Yugoslavia	1,707.6	1,637.7	1,573.2

a Including special classes
b 1969
c 1961
d 1967
e 1966
f 1959
( )Estimates

Table 6

Enrolment in Secondary Education 1960-1970

000s

	1960	1965	1970
		Full-time	
Austria	460.6	449.9	652.1
Belgium	561.3	687.6	716.2 a
Canada	1,565.1	2,204.1	2,797.4
Denmark	n.a.	417.3	440.8
France	3,342.7	4,127.3	4,460.8
Germany	3,489.7	3,763.5	4,862.9 b
Ireland	(107.9)	145.5	209.7
Italy	2,186.7	3,059.6	3,836.3
Japan	9,139.4	11,049.6	8,978.1
Luxembourg	18.4	20.5	30.8
Netherlands	763.7	857.5	1,006.2
Norway	n.a.	227.1	289.1
Portugal	266.2	323.0	503.0
Spain	1,177.5	1,670.2	2,503.9
Sweden	399.3	511.1	565.7
Switzerland	157.1 c	195.9 d	204.8 b
Turkey	475.2	701.5	1,308.8
U.K.	(3,619.5)	3,663.3 a	4,065.6
U.S.A.	16,678.0 e	20,739.0	23,263.0
		Full and Part-time	
Australia	556.0	771.0	956.0
Austria	615.4	614.0	798.7
Belgium	619.0	767.5	787.1 a
Canada f	1,605.9	2,259.3	n.a.
Denmark	n.a.	504.3	559.2
Finland	356.3	432.8	509.3
Germany	5,151.6	5,535.8	6,488.0 b
Greece	(325.6)	(441.2)	(505.2)b
Iceland	(13.0)	(18.0)	(20.0)
Japan	10,444.4	12,556.5	10,487.4
Luxembourg	20.8	23.2	31.7
Netherlands g	(914.1)	1,027.0	1,173.9
Norway	199.6	246.5	314.8
Portugal	229.0	325.6	504.8
Switzerland	289.3 c	335.7 d	341.4 b
U.K. h	n.a.	4,595.1 a	4,999.1
Yugoslavia	1,422.8	1,919.1	1,947.9

a 1966
b 1969
c 1961
d 1967
e 1959
f Excluding "correspondence course"
g Includes Apprenticeship Schemes
h Refers to people in "further education" who follow courses leading to a recognised qualification (but not the 1.4 million in evening institutes in 1970)

( )Estimates

Table 7

Enrolment in Higher Education 1960-1970

000s

	1960	1965	1970
		Full-time	
Austria	39.3	50.3	62.6
Belgium	52.0	80.8	87.6 a
Canada	163.2	273.6	475.5
Denmark	28.6	48.1	69.4
France	282.4	524.9	816.2
Germany	269.7	344.8	544.6
Ireland	n.a	20.7	26.2
Italy	284.4	424.7	710.1
Japan	703.5	1,078.9	1,666.2
Luxembourg	1.1	1.5	1.9
Netherlands	83.8	119.9	177.8
Norway	(21.6)	35.5	51.5
Portugal	24.4	34.9	52.8
Spain	143.0	274.1	352.0
Sweden b	n.a.	n.a.	152.1[c]
Switzerland	27.1 d	40.9	47.0 e
Turkey	65.3	92.1	162.7
U.K.	(175.5)	345.4 a	454.4
U.S.A.	2,466.0	3,910.0	5,490.0
Yugoslavia	140.6	185.0	261.2
		Full and Part-time	
Australia	n.a.	n.a.	175.8
Denmark	32.5	53.2	77.2
Finland	34.7	56.3	74.1
Germany	284.6	360.6	559.0
Greece	(30.5)	(68.7)	(84.6 e)
Japan	787.4	1,180.4	1,819.3
Netherlands	109.3	152.6	229.5
Norway	n.a.	35.7	51.6
Portugal	24.4	34.9	52.8
Switzerland	29.4 d	43.7 f	49.6 e
U.K.	n.a.	480.7 a g	598.9
U.S.A. h	3,583.0	5,526.0	7,920.2

a 1966; b The figures cover about 98% of the total enrolment in higher education. Including part-time students; c Incomplete figure d 1961; e 1969; f 1967; g Includes those students in "further educa who follow courses leading to a recognised qualification (120.6 thousand in 1970); h Degree credit students only; ( ) Estimates

Table 8

Enrolment in University-Type Higher Education 1960-1970

000s

	1960	1965	1970
		Full-time	
Austria	38.5	48.9	54.9
Belgium	30.7	45.6	69.8
Canada	113.9	205.9	356.7
Denmark	14.4	29.8	46.0
France	234.2	434.0	689.4
Germany a	211.1	266.1	407.1
Ireland	9.7	16.0	20.3
Iceland	(0.8)	(1.1)	(1.4)
Italy	275.1	412.4	694.5
Japan	619.4	925.0	1,386.5
Luxembourg	0.8	1.0	(1.5)
Netherlands	40.7	64.4	103.4
Norway	9.2	18.5	30.0
Portugal	19.6	26.1	41.2
Spain	77.1	125.9	213.2
Sweden	36.9	68.1	123.7
Switzerland	23.4 b	36.0 c	42.2 d
Turkey	47.8	60.1	80.6
U.K.	n.a.	213.8 e	277.5
U.S.A.	n.a.	n.a.	4,614.0
Yugoslavia	108.9	116.3	180.1
		Full and Part-time	
Australia f	53.6	83.3	116.8
Canada g	(145.1)	279.8	525.4
Finland	24.1	41.2	57.2
Denmark	14.4	29.8	46.1
Greece	25.7	54.3	72.3
Norway	9.2	18.5	30.0
Portugal	19.6	26.1	41.2
U.K. h	n.a.	238.9 e	312.2
U.S.A. i	3,131.0	4,685.0	6,290.2

a Includes "Pädagogische Hochschulen"; b 1961; c 1967; d 1969; e 1966; f Universities only; g Including students enrolled in university transfer courses given in community colleges and for 1970 only CEGEP academic enrolment; h Includes students in university type 'further education' (11.1 thousand in 1970); i Degree credit students only; ( ) Estimates.

Table 9

Enrolment in Non-University Higher Education 1960-1970

000s

	1960	1965	1970
		Full-time	
Austria	0.8	1.4	7.7
Belgium	21.3	35.2	37.8 a
Canada	49.3	67.7	118.8
Denmark	14.2	18.3	23.4
France	48.2	90.9	126.8
Germany	58.6	78.7	137.5
Ireland	n.a.	4.7	5.9
Italy	9.3	12.3	15.6
Japan	84.1	153.9	279.7
Luxembourg	0.3	0.5	0.4
Netherlands	43.1	55.5	74.4
Norway	(12.4)	17.0	21.5
Portugal	4.8	8.8	11.6
Spain	65.9	148.2	138.8
Sweden	n.a.	n.a.	28.4 b
Switzerland	3.6 c	4.9 d	4.9 e
Turkey	17.5	32.0	82.1
U.K.	n.a.	131.6 a	176.9
U.S.A.	247.0	495.0	876.0
Yugoslavia	31.7	68.7	81.1
		Full and Part-time	
Denmark	18.1	23.4	31.1
Finland	10.5	14.4	16.9
Germany	73.5	94.5	151.9
Greece	(4.8)	(12.4)	(12.0)e
Netherlands	68.6	88.2	126.1
Norway	n.a.	17.2	21.6
Portugal	4.8	8.8	11.6
Switzerland	5.9 c	7.7 d	7.5 e
U.K. f	n.a.	241.8 a	286.7
U.S.A. g	451.0	841.0	1,630.0

a 1966; b Incomplete figure; c 1961; d 1967; e 1969; f For part-time, includes mainly those students in non-university type 'further education' who follow courses leading to recognised qualifications (109.5 thousand in 1970); g Degree credit students only; ( ) Estimates.

Table 10

Enrolment in Postgraduate[a] Courses 1960-1970

000s

	Students (full and part-time)		Average Annual Compound Growth Rate of Enrolment
	1960	1970	1960-71
Canada	17.6 b	47.5	15.2
France c	15.1	(38.1)	10.8
Japan	15.7	41.0	10.0
Spain	1.5	2.9	10.3
Sweden	4.1	12.3	11.7
U.K.	29.0 d	79.5	10.6
U.S.A.	314.3	816.2	10.0

a Including all degrees undertaken after the first degree (master, doctorate, etc..).

b 1963

c Excluding doctorates in medicine

d Partly estimated

Sources: Canada: Education in Canada 1973, p.153 t.37, p.155, t.38; France: Informations statistiques No. 42.43. pp 270, 276, 278, 285 and Statistiques des enseignements; Japan: Educational Statistics in Japan 1971, p.34 t.12; Spain: Estadistica superior 1968/69 p.24 t.25 and Estadistica Superior 1961/62 p.63 t.xx; Sweden: S.C.B. Utbildningestatistik 1966-70, p.148 t.83, Högre studier 1960/61, p.58 t.26; U.K.: England and Wales, Statistics of Education; Scottish Educational Statistics; Northern Ireland Education Statistics and estimates by the Department of Education and Science, p.32 t.25; U.S.A.: A Fact Book on Higher Education; First issue-1973 enrolment data p.73.38

Table 11

Ratio of Female to Total Enrolment in Higher Education 1960-1970

(full and part-time)

	Total			Non-University			University		
	1960	1965	1970	1960	1965	1970	1960	1965	1970
Austria	23.9	24.3	28.6	62.5[a]	35.7[a]	55.8[a]	23.1	23.9	24.8
Belgium	26.3	34.0	n.a.	37.1	44.9	n.a.	19.2	25.7	n.a.
Denmark	30.5	34.0	36.4	35.4	38.9	43.1	24.3	30.2	31.9
Finland	46.5	50.7	48.6	45.7	55.6	52.1	46.9	49.0	47.6
France	37.1	40.3	n.a.	24.5	35.1	n.a.	39.7[b]	41.4[b]	n.a.[b]
Germany	17.1	18.0	24.1	6.3	5.5	5.9	20.8[b]	22.5[b]	29.6[b]
Greece	(25.3)	(31.8)	(30.4)[c]	(44.5)	(47.9)	(23.4)[c]	(23.0)	(30.5)	(31.4)[c]
Ireland	n.a.	29.5	n.a.	n.a.	34.0	n.a.	n.a.	28.1	n.a.
Italy	26.8	32.9	38.5	45.2	46.3	49.4	26.2	32.5	38.3
Japan	20.7	24.5	28.2	66.1	67.9	71.0	14.9	17.2	19.1
Luxembourg	9.1	20.0	(30.3)	-	20.0	25.0	12.5	20.0	(30.5)
Netherlands	24.9	25.2	27.5	29.0	30.4	34.0	17.9	18.0	19.6
Norway	n.a.	39.2	37.6	n.a.	55.2	49.4	n.a.	23.8	28.6
Portugal	29.5	37.5	44.7	24.0	30.0	33.4	31.0	40.2	47.9
Spain	n.a.	28.1	28.8	59.3	34.1	32.6	n.a.	21.1	26.4
Sweden	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	33.5	n.a.	37.2
Turkey	19.9	22.0[d]	19.7	26.9	20.6[d]	19.5	17.4	22.8[d]	19.9
U.K.	n.a.	30.2[d]	34.0	n.a.	34.6[d]	42.0	n.a.	25.6[d]	27.3
Yugoslavia	28.8	33.4	39.5[c]	n.a.	34.4	40.2[c]	n.a.	29.5	37.0[c]

a Excluding for girls "lehrgang für medizinish technische Assistenten"
b Excluding "höhere Fachschulen" and including a small portion of part-time pupils
c 1969
d 1966
( ) Estimates

Table 12

Full-time Enrolment in Compulsory Education
(1960-1970)

000s

	1960	1965	1970
Australia	n.a.	2,105.1	2,278.6[a]
Austria	772.9	826.9	1,015.5
Belgium b	1,105.8	1,138.5	n.a.
Canada	3,561.0	4,066.8	4,301.8
Denmark	563.3	519.3	513.5
Finland	808.0	758.0	724.0
France b	7,727.0	8,178.1	8,504.4
Germany	6,125.4	6,714.8	7,730.5[a]
Greece	921.3	975.9	914.2
Ireland	.n.a.	496.4	546.7
Italy	5,753.7	6,275.4	7,008.3
Japan	18,490.7	15,732.2	14,210.2
Luxembourg	(38.3)	41.2	44.4
Netherlands	(1,868.9)	(1,863.5)	1,946.8
Norway	546.9	535.8	552.3
Portugal	976.3	1,011.4	1,150.5
Spain	3,296.8	4,103.5	5,195.0
Sweden	806.8	867.5	966.4
Switzerland	695.2[b]	729.5 [c]	767.1[a]
Turkey	2,866.5	3,933.2	5,013.4
U.K.	n.a.	8,113.8	9,007.8
U.S.A.	35,562.0[d]	40,375.0	41,197.0
Yugoslavia	2,786.4	2,970.8	2,883.4[a]

a 1969
b 1961
c 1967
d 1959
( )Estimates.

Table 13

Enrolment in Post-Compulsory Education 1960-1970

000s

	1960	1965	1970
		Full-time	
Australia	n.a.	n.a.	407.7 a
Austria	125.8	144.7	231.1
Belgium b	249.0	365.0	n.a.
Canada	725.9	1,259.5	1,874.7
Denmark	n.a.	309.2	368.9
France b	599.2	1,144.8	1,571.6
Germany	786.1	891.6	1,224.2 a
Ireland	n.a.	56.2	83.8
Italy	1,056.9	1,689.1	2,378.9
Japan	3,942.9	6,171.9	5,927.5
Luxembourg	9.3	11.9	19.7
Netherlands	394.3	523.0	699.6
Norway	n.a.	138.9	173.9
Spain	367.9	569.4	877.3
Sweden b	n.a.	n.a.	388.7
Switzerland	66.0 c	87.5 d	96.6 a
Turkey	540.5	793.6	1,471.5
U.K.	n.a.	1,108.8 e	1,362.2
		Full and Part-time	
Australia	n.a.	n.a.	864.2 a
Austria	280.6	308.8	377.6
Belgium b	306.7	444.9	n.a.
Canada	n.a.	1,388.6	n.a.
Denmark	n.a.	401.3	495.1
Finland	129.9	193.4	248.4
Germany	2,462.9	2,679.7	2,865.7 a
Greece	(356.1)	(507.9)	(589.8) a
Japan	5,331.9	7,780.2	7,589.9
Luxembourg	11.7	14.6	20.6
Netherlands	(516.8)	725.0	919.1
Norway	n.a.	150.4	186.5
Portugal	162.6	239.8	336.0
Switzerland	200.5 c	230.0 d	235.8 a
U.K.	n.a.	2,175.9 e	2,441.2
U.S.A. f	7,740.0	11,438.0	14,672.0
Yugoslavia	503.6	933.4	1,109.1 a

a 1969
b Incomplete figures
c 1961
d 1967
e 1966
f Degree credit students only
( ) Estimates

Table 14

Enrolment Rates for Children Aged 3 to 6

		per cent of population at each age enrolled in academic year beginning at date cited				
		3	4	5	6	3-6
Australia	1971	n.a.	n.a.	n.a.	100	55
Austria	1970	n.a.	n.a.	n.a.	97	(45)
Belgium	1966	90	95	99	99	96
Canada	1970	5	20	85	98	54
Denmark	1970	n.a.	n.a.	n.a.	n.a.	16
Finland	1968	n.a.	n.a.	n.a.	n.a.	(7)
France	1970	61	87	100	100	88
Germany a	1970	n.a.	n.a.	n.a.	n.a.	45
Greece b	1969	n.a.	n.a.	n.a.	98	46
Ireland	1971	3	61	95	98	65
Italy	1970	n.a.	n.a.	n.a.	n.a.	62
Japan	1970	4.3	38.2	55.9	(100)	(50)
Luxembourg	1970	0	65	91	100	64
Netherlands	1970	0	84	96	99	70
Norway	1970	n.a.	n.a.	n.a.	n.a.	(4)
Portugal	1970	n.a.	n.a.	4	24	(7)
Spain	1970	12	43	49	98	56
Sweden c	1970	n.a.	n.a.	n.a.	n.a.	30
Switzerland	1970	n.a.	n.a.	n.a.	n.a.	(39)
United Kingdom	1970	6	35	98	99	60
United States	1970	13	28	80	98	57
Yugoslavia	1965	n.a.	n.a.	n.a.	n.a.	(12)

Notes:
a The data refer to "places" supplied. The number of children considerably exceeds the number of places
b Excluding pre-kindergarten
c Includes i) children in day nurseries, where children 6 months to 6 years are cared for at least 5 hours a day, and ii) children in nursery schools, where groups of children aged 4-6 play under a teacher's supervision for less than 5 hours, every day.

N.B. The figures in brackets are estimates based on the assumption that 90 per cent of pupils enrolled in pre-primary education belongs to the age-group 3-5 (for countries in which compulsory schooling begins at age 6).

Table 15

Full-time Enrolment Rates for Children aged 7-14 a

		per cent of population 7-14 enrolled in academic year beginning at date cited
Australia	1971	(99.8)
Austria	1969	99.8
Belgium	1966	98.0
Canada	1970	98.2
Denmark	1970	98.1
Finland	1967	99.0
France	1970	98.6
Germany	1969	98.0
Greece	1969	90.7
Iceland	1970	(97.4)
Ireland	1971	97.0
Italy	1966	87.3
Japan	1970	(99.9)
Luxembourg	1970	93.8
Netherlands	1970	99.0
Norway	1970	99.0
Portugal	1970	89.0
Spain	1970	90.2
Sweden	1972	99.2
Switzerland	1970	96.7
Turkey	1968	76.4
United Kingdom	1970	98.5
United States	1970	(99.0)
Yugoslavia	1968	85.9

Notes : a In many cases, special schools for handicapped children are excluded
( ) Estimates

Table 16

Full-time Enrolment Rates for Children Aged 15-18

per cent of population at each age enrolled in academic year beginning at date cited

		15	16	17	18	15-18
Australia	1971	81.5	54.2	37.2	23.6	49.4
Austria	1969	54.8	32.6	23.6	16.4	31.9
Belgium	1966	75.1	61.3	47.0	33.2	54.2
Canada a	1970	98.0	89.1	77.2	45.8	78.1
Denmark	1970	85.2	66.8	31.8	23.2	51.7
Finland	1967	(59.2)	51.9	43.5	35.2	47.4
France	1970	80.5	62.6	45.1	29.1	54.3
Germany b	1969	54.9	30.8	20.4	15.7	30.5
Greece	1969	56.8	49.1	45.8	26.1	44.7
Iceland	1970	n.a.	n.a.	n.a.	n.a.	n.a.
Ireland	1971	70.7	55.1	39.4	20.6	47.0
Italy	1966	42.1	33.6	27.4	20.2	30.8
Japan	1970	(83.8)	(79.0)	(74.8)	(29.9)	(65.8)
Luxembourg	1970	56.6	40.5	30.2	22.4	37.4
Netherlands	1970	79.7	60.6	41.5	28.4	52.5
Norway c	1970	94.2	74.6	59.8	46.5	68.9
Portugal	1970	30.1	25.4	22.0	20.4	24.5
Spain	1970	35.0	29.6	22.8	19.0	26.7
Sweden d	1972	96.7	74.0	60.8	40.8	68.1
Switzerland	1970	95.9	66.7	54.8	32.8	62.6
Turkey	1968	n.a.	n.a.	n.a.	n.a.	(21.1)
U.K.	1970	73.0	41.5	26.2	17.6	39.4
U.S.A. e	1970	97.7	93.5	86.2	53.8	82.9
Yugoslavia	1968	n.a.	n.a.	n.a.	n.a.	36.6

Notes:
a Excludes enrolment in trade schools and schools for the handicapped
b Excludes part-time compulsory vocational schools
c Includes a very minor number of part-time pupils
d Excludes enrolment in special schools
e Including part-time students in higher education
( )Estimates

Table 17

Full-time Enrolment at Ages 19-25

per cent of population at each age enrolled in academic year beginning at date cited

		19	20	21	22	23	24	25
Australia	1971	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Austria	1969	10.4	8.7	7.5	6.7	5.6	4.5	4.4
Belgium	1966	24.4	16.9	13.0	7.3	5.2	3.4	n.a.
Canada a	1970	31.6	25.9	21.0	12.6	8.3	5.5	4.3
Denmark	1970	18.0	14.7	14.8	14.6	12.5	10.9	9.5
Finland	1967	26.9	20.7	19.0	17.9	16.7	14.2	11.6
France	1970	19.5	16.2	15.6	12.6	9.7	6.5	6.9
Germany	1969	12.6	10.6	9.5	9.1	7.5	6.9	5.8
Greece	1969	(20.7)	(20.1)	(18.6)	(7.9)	6.7	4.9	3.7
Ireland	1971	12.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Italy	1966	15.5	10.0	7.0	4.5	3.0	1.5	n.a.
Japan	1970	(22.0)	(13.8)	(13.7)	(0.9)	(1.1)	(0.2)	(0.2)
Luxembourg	1970	17.8	13.5	11.2	7.2	5.4	3.2	1.3
Netherlands	1970	20.6	15.1	11.1	8.4	6.7	5.1	4.6
Norway	1970	31.7	22.6	19.5	17.1	14.2	11.4	n.a.
Portugal	1970	16.3	13.0	9.5	7.5	6.4	5.4	5.7
Spain	1970	16.7	19.0	11.0	6.7	6.4	5.6	5.8
Sweden b	1972	24.0	19.8	17.9	16.5	13.9	11.8	9.6
Switzerland c	1970	9.0	9.0	5.9	5.4	4.9	4.2	3.5
Turkey	1970	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
U.K.	1970	14.3	12.4	.....	4.6	.....		n.a.
U.S.A.	1970	40.9	(35.4)	(28.3)	.....	14.9		n.a.

a Excludes handicapped and trade schools; b Full and part-time; c "Hautes écoles suisses" Winter semester 1970-71; ( ) Estimates

Table 18

Average Annual Compound Growth Rate of School Age[a] Population by level 1960-70

	Primary	Secondary	Higher	Compulsory	Post Compulsory
Australia	1.9	2.7	4.8	2.4	4.0
Austria	2.9	0.4	- 0.5	1.8	- 0.4
Belgium	1.1	1.7	2.6	1.0	2.3
Canada	1.7	3.3	4.4	2.1	4.3
Denmark	- 0.1	- 1.4	3.4	- 0.5	- 0.7
Finland	- 1.8	0.9	2.9	- 1.7	2.8
France	0.5	1.3	4.1	0.5	4.0
Germany	2.6	1.4	- 2.1	2.4	- 1.2
Greece[b]	0.3	0.5	- 0.1	0.3	0.2
Ireland [c]	0.9	0.2	2.7	0.7	2.0
Italy	0.7	- 0.2	0.1	0.2	0.1
Japan	- 2.8	- 1.3	2.0	- 2.6	1.0
Netherlands	0.7	0.4	3.4	0.3	2.9
Norway	0.1	0.9	4.2	- 0.1	3.1
Portugal	0.0	- 0.5	- 0.8	- 0.2	- 0.7
Spain	1.9	0.9	1.1	1.5	0.9
Sweden	- 0.6	- 1.3	3.4	- 1.0	2.0
Turkey	3.2	4.6	3.0	3.2	3.9
U.K.	1.1	- 0.1	2.4	0.9	1.6
U.S.A.	1.2	2.8	4.1	1.7	3.9
Yugoslavia[d]	- 0.6	2.3	0.6	- 0.1	2.0

a The age ranges are those relevant in each country for the level of education specified. For post compulsory. the age spread used was that between the termination of the compulsory phase (see column 2 of Table 1) and 25 years of age.

b 1960-1969

c 1961-1971

d 1961-1970

Table 19

Average Annual Compound Growth Rate of Enrolment by Level 1960-70

	Primary	Secondary	Higher	Compulsory	Post Compulsory
Australia	1.5	5.6*	n.a.	n.a.	n.a.
Austria	2.9	3.6	4.8	2.8	6.3
Belgium	0.8	4.1[a]	9.1[a]	n.a.	n.a.
Canada	1.3	6.0	11.3	1.9	10.0
Denmark	n.a.	n.a.	9.3	-0.9	n.a.
Finland	- 3.4	3.6*	7.9*	-1.1.	6.7*
France	- 0.2	2.9	11.2	1.0	10.1
Germany	1.6[b]	3.8[b]	7.3	2.6	5.0[b]
Greece	-0.8	(5.0)[b*]	(12.0)[b*]	-0.1	(5.8)[b*]
Iceland	(2.7)	6.9	n.a.	n.a.	n.a.
Ireland	1.0	(6.2)	n.a.	n.a.	n.a.
Italy	1.1	5.7	9.5	2.0	8.5
Japan	- 2.8	-0.2	9.0	- 2.6	4.2
Luxembourg	1.4	5.3	5.6	1.5	7.8
Netherlands	0.3	(2.5)	7.8	0.4	5.9
Norway	- 1.1	n.a.	(9.1)	0.1	n.a.
Portugal	0.5	8.3*	8.1	1.6	7.5*
Spain	(3.2)	7.8	9.4	4.7	9.1
Sweden	- 1.2	3.5	n.a.	1.8	n.a.
Switzerland	0.7[c]	3.4[c]	7.1[c]	1.2	4.9[c]
Turkey	5.7	10.7	9.5	5.7	10.6
U.K.	1.6	1.2	10.0	n.a.	n.a.
U.S.A.	0.9[d]	3.1[d]	8.3[e*]	1.3	6.6*
Yugoslavia	- 0.8	3.2*	6.4	0.4	9.2[b*]

N.B. These figures refer to full-time enrolment except those which are asterisked which refer to full and part-time enrolment

a 1960-66
b 1960-69
c 1961-69
d 1959-70

e Degree credit students only
( ) Estimates

Table 20

Average Annual Compound Growth Rate of Enrolment RATES by Level 1960-1970

	Secondary	Higher
Australia	2.8*	n.a.
Austria	3.2	5.3
Belgium	1.7[a]	8.3[a]
Canada	2.6	6.6
Denmark	n.a.	5.7
Finland	2.7*	4.9*
France	1.6	7.1
Germany	2.4[b]	9.6
Greece	(4.5)[b*]	(12.1)[b*]
Ireland	6.0	n.a.
Italy	6.0	9.4
Japan	1.1	6.9
Netherlands	2.1	4.3
Norway	n.a.	4.7
Portugal	8.8*	9.0
Spain	6.8	8.2
Sweden	4.9	n.a.
Turkey	5.8	6.3
U.K.	1.3	7.4
U.S.A.	0.3[c]	4.0[c*]
Yugoslavia	0.9*	5.8

a 1960-66;
b 1960-69;
c 1959-70.

Source : This table is derived from the data underlying Table 18 (which shows annual average compound growth rate of the school age population) and Table 19 (which shows the annual average compound growth rate of enrolment). The figures refer to full-time enrolment except those which are asterisked which refer to full and part-time enrolment.

III. New Entrants (Tables 21-25)

These tables should provide a useful early warning indicator of changes in enrolment trends in higher education, particularly Tables 23-25 when they become available as time series. At the moment most countries have rather incomplete data on new entrants, either because figures for certain institutions are missing, or because reliance is placed on information for first year students (which contain data on repeaters as well as new entrants).

For France and Spain, where data on new entrants and total enrolments in the first year of studies were available for only one year, we have calculated the proportion of repeaters in the first year. In 1970 in France this proportion was about 15% in non-university higher education and 24% in university education, and in 1971 in Spain 36% and 31% respectively. This factor explains why the data for these countries in tables 21 and 22 differ from the first column of tables 23 and 24.

In the present state of statistics those considered as new entrants are the students enrolled for the first time in the first year of a given programme. For example, a student already holding a first degree in Science who enrolled in the first year of a Faculty of Arts would be considered as a new entrant. However, a student who for some reason was given a year's dispensation and who entered directly into the second year of a given programme would not be considered as a new entrant.

The tables should be used with considerable caution for purposes of international comparison. The problem of measuring and comparing access to higher education is complicated by the great variety of institutions and systems, and big differences in age of entry and duration of study. Table 25 is probably the best way to make international comparisons of access to higher education. The measurement problems are discussed at some length in Development of Higher Education 1950-67, Analytical Report, OECD, Paris, 1971.

Table 21

New Entrants to University-Type Higher Education 1960-1972[a]

000s

	1960	1965	1966	1967	1968	1969	1970	1971	1972
Australia b	(11.6)	23.4	25.5	24.0	23.5	25.5	28.5		
Austria	8.5	8.1	8.2	8.3	8.9	9.2	10.9	10.6	11.4
Belgium d	7.4	12.5	12.7	13.8	14.8	16.1	17.3	18.7	
Canada	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	68.3	69.9
Denmark	3.4	7.1	7.0	7.5	8.0	8.6	9.8	10.8	12.0
Finland	5.6	9.8	9.9	10.3	9.9	10.1	9.4	10.0	10.3
France c d e	64.2	128.4	134.0	156.3	136.1	123.4	168.2	169.1	
Germany	n.a.	n.a.	n.a.	60.7	77.1	81.3	85.7	94.7	
Greece	7.1	13.4	12.5	17.4	13.0	12.4	n.a.		
Ireland c	2.5	4.2	4.5	4.1	4.4	n.a.	n.a.		
Italy	57.4	102.9	116.5	124.1	139.1	171.8	191.0		
Japan	162.9	245.3	288.2	312.7	319.8	324.3	327.2		
Luxembourg	n.a.	0.3	0.3	0.4	n.a.	n.a.	0.4	0.4	0.4
Netherlands a	7.2	12.6	13.3	13.7	16.0	17.0	18.4		
Norway	n.a.	5.6	5.4	5.7	6.1	6.9	6.4		
Spain d	n.a.	n.a.	51.5	54.6	61.4	68.1	76.6	86.3	
Sweden	7.8	16.9	20.3	26.0	29.7	27.2	26.5	24.5	23.4
Switzerland	n.a.	n.a.	n.a.	n.a.	8.1	9.0	8.0		
Turkey	n.a.	15.1	13.5	14.4	16.3	15.6	14.3		
U.K. a e	(38.0)	n.a.	n.a.	71.8	75.9	79.7	81.8		
U.S.A.	709.1	1,041.0	(989.0)	(992.0)	1,076.1	1,107.1	1,126.4	1,095.5	1,065.1
Yugoslavia	48.1	43.7	40.9	42.5	55.0	58.8	62.6		

a These figures are intended to show both full and part-time education but in some countries the data cover only full-time education as in the case of the Netherlands and the U.K.
b Figures not complete (excludes non-degree courses before 1970)
c Figures not complete
d First-year students
e See notes to individual country data in part II of the Yearbook
( )Estimates

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Table 22

New Entrants to Non-University Higher Education 1960-1972[a]

000s

	1960	1965	1966	1967	1968	1969	1970	1971	1972
Australia	n.a.	n.a.	n.a.	n.a.	n.a.	(19.3)	(23.3)		
Austria b		0.6	0.9	1.3	3.4	3.5	4.3	4.0	4.3
Belgium	10.5	16.9	n.a.	n.a.	n.a.	n.a.	(23.4)		
Canada	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	68.9	75.5
Denmark	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	10.7	11.8[c]	13.7[c]
Finland	n.a.	5.0	3.9	4.6	5.0	4.7	6.2	6.7	6.3
France b	n.a.	54.4	54.5	60.8	66.1	63.7	74.1	79.8	
Germany	n.a.	n.a.	n.a.	38.3	41.8	43.5	44.0		
Italy b	3.2	4.4	5.6	5.9	6.2	6.8	6.0		
Japan	42.3	83.9	113.5	129.9	137.0	138.4	137.3		
Luxembourg	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
Netherlands	n.a.	n.a.	n.a.	20.8	16.2	17.9	22.0		
Norway b	n.a.	8.2	8.7	8.6	9.6	9.4	9.8		
Spain b	n.a.	65.9	66.7	59.3	57.7	60.2	64.0	68.5	
Sweden	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	(16.0)		
Turkey	n.a.	11.6	14.9	20.1	26.2	22.9	22.3		
U.K. c	(36.7)	n.a.	n.a.	68.4	71.9	73.1	77.2		
U.S.A.	214.0	400.8	(389.0)	(447.0)	553.7	641.5	653.7	670.1	675.3
Yugoslavia	22.7	42.3	43.6	47.3	43.9	45.6	48.8		

a See note on Table 21
b First-year students
c See notes in individual country annexes to this document
( ) Estimates

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Table 23

Annual Entry (a) to University type Higher Education as a Percentage of the Relevant Age-Group in 1970

	New entrants (000s)	Age* spread which encompasses at least 70 per cent of new entrants	Population in age range mentioned in column 2 divided by number of years specified (000s)	Ratio of new entrants to population (percentage)
Australia	28.5	17 - 18	221	12.9
Austria[b]	10.9	18 - 20	95	9.7
Belgium[b]	17.3	18 - 20	143	12.1
Canada[c,d]	68.3	18	408	16.7
Denmark	9.8	19 - 21	79	12.4
Finland	9.4	19 - 21	86	10.9
France[e]	(128.5)	18 - 20	856	(15.0)
Germany	85.7	19 - 21	821	10.4
Italy[b]	191.0	19 - 21	817	23.4
Japan	327.2	18	1,956	16.7
Netherlands[a]	18.4	18 - 20	221	8.3
Norway[b,c]	6.4	19 - 21	59	10.8
Spain	(52.8)	17 - 19	525	(10.1)
Sweden	26.5	19 - 21	113	23.5
Turkey	14.3	18 - 20	713	2.0
U.K.[b]	81.8	18 - 19	770	10.6
U.S.A.[f]	1,126.4	18	3,826	29.3
Yugoslavia	62.6	18 - 20	383	16.3

Source : The first column is derived from Table 21 except for France and Spain where an adjustment was made to exclude students repeating their first year.

* In the absence of data by single year of age broken down separately for university and non-university, the same age spread was used for each category as for all higher education.

a In principle, these figures cover entrants to both full-and part-time study education, but in some countries they may cover only full-time education. This is the case in the Netherlands and United Kingdom.

b For Belgium, partially for the United Kingdom and to a minor extent for Italy, Austria and Norway, the figures refer to first year students, i.e. they include both new entrants and repeaters and therefore overstate enrolments relative to other countries.

c Covers only high school graduates of 1970-71 proceeding directly to higher education in 1971.

d 1971

e Excludes new entrants to "Grandes Ecoles" and "Instituts d'université".

f Statistics calculated to the nearest birthday for age 18(17½ to 18½)

( ) Estimates

Table 24

Annual entry (a) to Non-University Higher Education as a Percentage of the Relevant Age-Group in 1970

	New entrants (000s)	Age spread* which encompasses at least 70 per cent of new entrants	Population in age range mentioned in column 2 divided by number of years specified (000s)	Ratio of new entrants to population (percentage)
Australia	(23.3)	17 - 18	221	(10.5)
Austria[b]	4.3	18 - 20	95	4.5
Belgium[b]	(23.4)	18 - 20	143	(16.4)
Canada[c,d]	68.9	18	408	16.9
Denmark	10.7	19 - 21	79	13.5
Finland	6.2	19 - 21	86	7.2
France[e]	(63.3)	18 - 20	856	(7.4)
Germany	44.0	19 - 21	821	5.4
Italy[b]	6.0	19 - 21	817	0.7
Japan	137.3	18	1,956	7.0
Netherlands[a]	22.0	18 - 20	221	10.0
Norway[b,c]	9.8	19 - 21	59	16.6
Spain	(42.0)	17 - 19	525	(8.0)
Sweden	(16.0)	19 - 21	113	(14.2)
Turkey	22.3	18 - 20	713	3.1
U.K.[b]	77.2[g]	18 - 19	770	10.0[g]
U.S.A.[f]	653.7	18	3,826	17.1
Yugoslavia	48.8	18 - 20	383	12.7

Source : The first column is derived from table 22 except for France and Spain where an adjustment was made to exclude students repeating their first year.

* In the absence of data by single year of age broken down separately for university and non-university, the same age spread was used for each category as for all higher education.

a b c d e f : See notes to Table 23

g Excludes 66.2 thousand students taking "block release courses", "day release courses" and "evening only courses."

( ) Estimates

Table 25

Annual Entry (a) to Higher Education as a Percentage of the Relevant Age Group in 1970

	New entrants (000s)	Age spread which encompasses at least 70 per cent of new entrants	Population in age range mentioned in column 2 divided by number of years specified (000s)	Ratio of new entrants to population (percentage)
Australia	51.8	17 - 18	221	23.5
Austria[b]	15.2	18 - 20	95	16.0
Belgium[b]	(40.7)	18 - 20	143	(28.5)
Canada[c d]	137.2	18	408	33.6
Denmark	20.5	19 - 21	79	26.0
Finland	15.7	19 - 21	86	18.3
France[e]	(191.8)	18 - 20	856	(22.4)
Germany	129.7	19 - 21	821	15.8
Italy[b]	197.0	19 - 21	817	24.1
Japan	464.5	18	1,956	23.8
Netherlands[a]	40.4	18 - 20	221	18.3
Norway[b c]	16.2	19 - 21	59	27.5
Portugal	(10.0)	18 - 20	151	(6.6)
Spain	(94.8)	17 - 19	525	(18.1)
Sweden	(42.5)	19 - 21	113	(37.6)
Turkey	36.6	18 - 20	713	5.1
U.K.[b]	159.0[g]	18 - 19	770	20.6[g]
U.S.A.[f]	1,780.1	18	3,826	46.5
Yugoslavia	111.4	18 - 20	383	29.1

a, b, c, d, e, f : See notes to Table 23
g See note to table 24
( ) Estimates

IV. Teachers Employed in Education (Tables 26-30)

Data on teachers are more difficult to collect and to compare than those on pupils, and as they are usually presented, they can seldom be used to calculate reliable pupil-teacher ratios. There are several reasons for this:

(a) the exact definition of a teacher differs from country to country. In some countries the statistics may cover all persons having some kind of responsibility connected with teaching even if all or part of their time is spent on other duties e.g. heads of educational institutions may be included. In other countries the definition may be more restrictive and be strictly limited to persons whose only duty is teaching;

(b) information on teachers is very often collected by type of institution and not by type of education. This means that it is not easy to get a satisfactory breakdown of teachers by level where several types of education coexist in the same institution;

(c) a teacher may teach in more than one institution or more than one level or type of education;

(d) the distinction between full-time and part-time teacher is not always clear and data on overtime are not always available. Thus the information available does not usually permit reliable calculation of full-time equivalences.

(e) The compulsory teaching load or the total number of hours of service required of a full-time teacher differs according to the country, the type of education and the qualifications of the teacher.

For all these reasons, and until standardised definitions are applied in all countries or the difference between definitions used in national statistics and the standardised definitions is specified, it is impossible to make international comparisons in this field, or to calculate reliable pupil-teacher ratios.

Due to this fact the data presented in tables 26 to 30 below, which are drawn from information collected in the individual countries, give an indication of the size of one of the major inputs to the educational system, but cannot at this stage be directly related to the data concerning pupils, nor be compared between countries, without incurring the risk of drawing erroneous conclusions.

Table 26

Teachers in Pre-Primary Education 1960-1970

000s

	1960	1965	1970
		Full-time	
Belgium	n.a.	15.4	n.a.
Canada	(7.0)	11.0	18.3
Finland*	n.a.	n.a.	1.2
France*	31.6	38.7	49.6
Germany	n.a.	n.a.	0.7 a
Ireland b	0.7	0.7	0.8
Japan	31.3	45.2	66.6
Sweden	n.a.	n.a.	9.5
U.K. c	n.a.	1.2	1.7
		Full and Part-time	
Austria	4.9	n.a.	n.a.
Denmark	n.a.	n.a.	0.8
Greece*	1.2	1.6	2.7
Ireland b	0.7	0.7	0.8
Italy	52.1	55.5	66.5
Japan	35.9	50.3	73.5
Luxembourg	0.1	0.2	0.3
Netherlands	11.5	13.6	16.0
Portugal*	0.2	0.4	0.7
Spain	14.9	17.6	25.0
Sweden	n.a.	n.a.	11.2

a 1969
b Excludes teachers in private schools
c Nursery only
* Provisional data
( ) Estimates

Table 27

Teachers in Primary Education 1960-1970

000s

	1960	1965	1970
		Full-time	
Belgium	n.a.	47.5	n.a.
Canada	94.7	107.9	119.4
France*	171.5	185.8	205.5
Germany	79.0	102.6	107.8 a
Ireland b	13.7	14.1	14.7
Japan	360.7	345.1	367.9
Norway	16.1	17.0	16.9
U.K.	n.a.	176.0	228.2
		Full and Part-time	
Austria	16.6	19.6	22.2
Denmark	n.a.	36.4 c	43.2 c
Finland*	20.7	19.9	n.a.
Greece*	24.4	27.4	29.3
Ireland b	13.7	14.1	14.7
Italy	192.9	202.8	217.2 a
Japan	362.7	347.3	369.9
Luxembourg	1.2	1.2	1.4
Netherlands	41.6	45.0	49.2
Portugal	26.1	28.0	27.7
Spain	n.a.	78.6	98.1
Sweden	(50.8)[d]	(44.3)[d]	41.8[d]
Turkey	62.5	89.1	132.7
U.S.A.	729.4[e]	869.2	989.6
Yugoslavia*	n.a.	n.a.	119.7

a 1969

b Excludes teachers in private schools

c Teachers in grade 1-10 in Folkeskolen

d In 1960 and 1965 includes teachers in grade 8-10 in Folkskolan. All figures are full time equivalents.

e 1959

* Provisional data

( ) Estimates

Table 28

Teachers in Secondary Education 1960-1970

000s

	1960	1965	1970
		Full-time	
Canada	n.a.	n.a.	142.9
France* a	154.7	218.8	281.8
Germany	137.8	165.3	205.0 b
Ireland c	5.3	6.8	11.0
Japan	374.9	478.5	478.7
Norway	n.a.	10.5	21.8
U.K. *	n.a.	223.8 d	254.3
		Full and Part-time	
Austria	n.a.	38.9 d	39.6 e
Greece*	n.a.	n.a.	15.5 b
Ireland c	8.2	10.7	16.0
Italy	187.1	249.6	333.7
Japan	440.4	565.2	578.0
Luxembourg	n.a.	1.2	1.5
Portugal	12.2	16.6	28.6
Spain	51.9	63.2	102.6
Sweden	(25.5)f	(34.4)f	38.8
Turkey	24.5	32.0	47.4
U.S.A.	810.9 g	1 089.2	1 350.3

a Excludes teachers in private agricultural education

b 1969

c Figures include a small number of teachers in higher education

d 1966

e 1968

f For 1960 and 1965 excludes teachers in grade 8-10 in Folkskolan. All figures are full time equivalents.

g 1959

* Provisional data

( )Estimates

Table 29

Teachers in University-Type Higher Education 1960-1970

000s

	1960	1965	1970
		Full-time	
Belgium	n.a.	5.1 a	8.2 b
Canada	n.a.	n.a.	36.7
France* c	7.9	18.5	34.1
Japan	44.4	57.5	76.2
Norway	1.2	2.0	2.7
		Full and Part-time	
Austria	3.9	5.2	7.9
Denmark	1.8	4.3	7.4
Finland*	2.4	3.7	5.7
Greece*	0.7	0.9	3.2
Ireland*	n.a.	1.2	1.7
Italy	30.5	40.1	43.2
Japan	61.0	83.2	118.9
Netherlands	(4.5)	(7.7)	(11.5)
Portugal	1.1	1.4	2.1
Spain	3.9	7.5	13.2 b
Turkey	(3.2)	4.3	7.4

a 1966
b 1971
c Excludes "Grandes Ecoles"
* Provisional data
( ) Estimates

Table 30

Teachers in Non-University Higher Education 1960-1970

000s

	1960	1965	1970
		Full-time	
Canada	n.a.	n.a.	12.0
Germany	n.a.	n.a.	9.4
Japan	6.4	9.7	16.5
Norway	n.a.	1.1	1.5
		Full and Part-time	
Austria	2.1	2.6	3.7
Denmark	n.a.	n.a.	3.7
Greece*	n.a.	n.a.	0.6 a
Ireland*	n.a.	(0.1)	n.a.
Italy	0.3	0.4	0.9
Japan	13.7	21.5	34,6
Luxembourg	0.01	0.05	0.05
Portugal	0.3	0.6	0.8
Spain	3.3	7.[illegible]	7.8 a
Turkey	(0.9)	[illegible].0	1.9

a 1969

* Provisional data

( ) Estimates

V. Expenditure on Education (Tables 31-33)

Information on educational expenditure is at present in a rather crude state, particularly from the standpoint of international comparability. The following tables must therefore be used with caution.

There are very substantial problems of comparability and definition in the expenditure statistics. In some countries the figures refer only to direct expenditures on educational services but in others there are important transfer expenditures on school milk and meals, youth activities, students' grants and loans, transport, etc. (1). There is a substantial intercountry variation in the importance of expenditure on research in higher education. Teachers' pensions are sometimes included in the education budget, sometimes not. Rental values for existing buildings are not included for the public sector. It is very difficult to get a breakdown of expenditure estimates by level of education. In general, private expenditure figures are very incomplete, and are not shown here.

Within the aggregate expenditure total, some figures are available on the distribution of costs by teachers, auxiliary staff, equipment, libraries, buildings etc. but this breakdown is not available in comparable form by country.

Tables 31-33 are derived from national publications which are not always comparable in their definition of the boundaries of the educational system. Table 31 shows expenditures converted into dollars at the same exchange rates as are used in O.E.C.D. national accounts statistics. O.E.C.D. and UNESCO have now agreed on a joint questionnaire on educational expenditure which should provide more comparable data. The present tables should therefore be used as providing guidelines on past trends in expenditure rather than as a basis for comparison of levels of spending.

It is perhaps useful to emphasise that the cost of education is broader than the items which normally figure in the budgets of Ministries of Education. The biggest input into education is student time, though it is not usually measured or indeed directly costed. There are about 180 million pupils in schools in O.E.C.D. countries and 60 million of these are above the minimum working age. If they were working they would add about 20 per cent to the labour force of Member countries. In most European countries, earnings foregone are as big as public expenditure on education, and in the U.S.A. they are much higher than public expenditure.

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(1) In the U.K., where published data on educational expenditure are more detailed than elsewhere, these various items amount to a sixth of the educational budget.

Table 31

Public Expenditure* on Education (Current and Capital) $ Million at Official Exchange Rates 1960-70

	1960	1965	1966	1967	1968	1969	1970
Australia	463	817	905	988	1 120	1 299	1 598
Austria	179	335	398	470	514	586	
Belgium	549	894	1 022	1 111			
Canada	1 672	3 053	3 858	4 625	5 211	6 253	6 928
Denmark	237	583	560	645	786	906	1 085
Finland	234	481	527	582	510	638	641
France	1 467	4 058	4 727	(5 256)	5 614	6 306	(6 911)
Germany	1 680	3 410	3 674	3 819	4 137	4 838	6 475
Greece	59	125	139	157	169	192	219
Iceland	8	16	20	24	19	17	21
Ireland	55	113	115	132	140	167	192
Italy	1 310	2 954	3 008	3 651	3 576		
Japan	1 726	3 847	4 385	4 947	5 646	6 582	8 012
Luxembourg	17	29	32	35	39	42	45
Netherlands	529	1 200	1 365	1 568	1 757	2 036	2 362
Norway	213a	373	430	499	550	609	668
Portugal	46	50	56	60	63	82	123
Spain	126	(387)	482	(549)	539	n.a.	774
Sweden	n.a.	1 256	n.a.	n.a.	2 104	2 387	2 530
Switzerland	275	485	552	606	675	755	872

Table 31 (cont.)

	1960	1965	1966	1967	1968	1969	1970
Turkey	132	305	361	392	433	n.a.	
United Kingdom b	2 857	4 953	5 486	5 850	5 602	6 015	6 893
United States	21 400	35 300	38 900	45 500	49 600	56 600	
Yugoslavia	244	402	338	396	446	545	669
Total Private Education Expenditure:							
Japan		1 121	1 282	1 419	1 557	1 703	1 889
United States		9 900	10 900	11 700	12 300	13 100	

* provisional data
a 1961
b includes loan charges
( ) estimates

- General sources :

Comparative Analysis of Educational Expenditure in Member Countries since 1950, OECD (to be published) for the following countries: Belgium (1960-67), Germany (1960-67), Ireland (1960-70), Netherlands (1960-67); Switzerland (1960-67), Turkey (1960-68). UNESCO Statistical Yearbook 1970, 1971 and 1972 for Australia (1960-70), Canada (1968-70), France (1960-70), Yugoslavia (1960-70).

- Specific Sources :

Austria : Statistical Yearbook 1970; Canada (1960-67) : Survey of Education Finance Ottawa 1967; Finland, Iceland, Norway : Yearbook of Nordic Statistics, 1972; Germany (1960-70) : Statistisches Jahrbuch 1971-72; United Kingdom : Education Statistics for the U.K. 1970.

- For Denmark, Greece, Japan, Luxembourg, Portugal, Spain, Sweden and United States data provided by the national authorities.

Table 32

Public Expenditure* on education (current and capital) 1960-70 in National Currencies (millions)

	1960	1965	1966	1967	1968	1969	1970
Australia	413	752	812	886	1 005	1 167	1 405
Austria	4 841	8 652	10 291	12 158	13 297	15 181	
Belgium	27 374	44 385	51 076	55 204			
Canada	1 622	3 346	4 049	4 989	5 617	6 539	7 245
Denmark	1 635	4 049	3 893	4 484	5 896	6 795	8 137
Finland	750	1 538	1 687	1 996	2 144	2 497	2 679
France	7 194	19 891	22 460	(25 863)	27 810	32 774	(38 214)
Germany	7 006	13 585	14 644	15 222	16 514	18 903	23 607
Greece	1 760	3 750	4 160	4 720	5 070	5 770	6 560
Iceland	266	722	887	1 065	1 165	1 463	1 810
Ireland	20	40	41	48	58	70	80
Italy	813 600	1 845 600	1 878 200	2 277 600	2 229 000		
Japan	621 492	1 385 011	1 578 471	1 780 914	2 032 458	2 369 359	2 884 367
Luxembourg	847	1 438	1 613	1 736	1 929	2 094	2 244
Netherlands	1 995	4 320	4 940	5 653	6 359	7 378	8 541
Norway	1 519[a]	2 661	3 069	3 559	3 936	4 351	4 772
Portugal	1 331	1 440	1 616	1 733	1 812	2 344	3 524
Spain	7 534	n.a.	28 938	n.a.	37 692	n.a.	(54 186)
Sweden	n.a.	6 600	n.a.	n.a.	10 900	12 350	13 090
Switzerland	1 187[a]	2 100	2 388	2 622	2 912	3 239	3 756
Turkey	1 185	2 746	3 245	3 528	3 895		
United Kingdom	1 017	1 772	1 962	2 194	2 340	2 516	2 877
United States	21 400	35 300	38 900	45 500	49 600	56 600	
Yugoslavia	733	3 614	4 225	4 947	5 573	6 814	8 366

a 1961
* provisional data
Sources : see Table 31

Table 33

Average Annual Compound Rate of Growth of Public Expenditure on Education in National Currencies 1960-1970

Australia	13.0
Austria	13.5[a]
Belgium	10.5[e]
Canada	16.2
Denmark	17.4
Finland	13.6
France	18.2
Germany	12.9
Greece	4.1
Iceland	21.1
Ireland	14.9
Italy	13.4[b]
Japan	16.6
Luxembourg	10.2
Netherlands	15.7
Norway	13.6[d]
Portugal	10.3
Spain	21.2
Sweden	15.0[c]
Switzerland	13.6[d]
Turkey	16.0[b]
U.K.	10.9
U.S.A.	11.4
Yugoslavia	27.5

a 1960-69
b 1960-68
c 1965-70
d 1961-70
e 1960-67

VI. Educational Attainment of the Population (Tables 34-41)

Table 34 presents a comparable picture of the average level of education achieved by the population aged 25-64 who have left the formal education system(1). It shows education received classified into primary, secondary and higher education in accordance with the standardised O.E.C.D. classification of educational levels.

Tables 35 and 36 present a comparison of average levels of education between generations. Table 35 shows the average level of education classified by level of education for the age cohort 25-34 (the first cohort in which virtually everybody has terminated regular education), and Table 36 refers to the age-cohort 65-74 (the cohort in which the majority of persons have ceased economic activity).

Tables 37 to 39 present the estimated change in average per capita educational attainment of the population aged 25-64 in the periods 1950 to 1960, 1960 to 1970, and 1970 to 1980 respectively.

The information for these tables was derived from national censuses and surveys. For 1950, census data were available only for Canada, Italy, the U.K. and U.S.A. For eleven O.E.C.D. countries data were available from the 1960 round of censuses, and for Germany and Denmark from surveys in the early 1960s. For eight countries data were available from censuses or surveys around 1970. Tables 34 to 39, which present data for 1970, are therefore based partly on estimation.

The procedure for deriving estimates of the education attainment of the population aged 25-64 in earlier or later years is based on the technique of moving age-cohorts back or forward in time by ten-year intervals from the census or survey data for 1960 or 1970.

For 1950, average years of education of the population aged 25-64 was calculated by weighting the average years of education by level of each of the ten year age-cohorts of the group aged 35-74 in 1960 by the population in each age-cohort in 1950.

For 1970 and 1980, a similar procedure was used. The average years of education by level of education received by the age-cohort 25-34 in 1970 and 1980 was derived by linear interpolation between the level of educational attainment as shown for the 25-34 year olds in the latest census available and that implied by current data on enrolment in education by age-group, e.g. The age-cohort aged 25-34 in 1960 received their secondary education around 1945. The same cohort in 1970 received their secondary education around 1955. The amount of secondary education being received in 1970 is derived from enrolment data. Assuming linear growth in education at secondary level between 1945 and 1970, the average amount of secondary education received in 1955 is readily derived.

(1) In this study, mean years of education are used as an indicator of educational attainment. An alternative, widely used for example in the U.S.A. is median years of education. It should be noted that the U.S. Bureau of the Census method of treating drop-outs is different from that used here.

The education levels in 1970 and 1980 were then calculated using the cohort method. The population in 1980 in each age-cohort was taken from projections provided by individual countries to the Manpower Committee of O.E.C.D.(1) This method is shown to be fairly accurate by the proximity of the projections derived using the cohort technique to estimates obtained directly from census data for 1970.

Tables 40 and 41, which were derived directly from census data, present a comparison of the average years of education received by the male and female populations over 15 years of age by level of education.

A number of adjustments were made to the census [illegible] in order to make the estimates as comparable as possible. In some countries (e.g. Italy) the census information referred to the final level of qualification received, and this had to be transformed into equivalent years of education with the help of information concerning the length of study required on average for the various qualifications. Allowances were also made to include years repeated and study years prior to drop-out. Adjustments were made to ensure the equivalent treatment of illiterates between countries. The figures were also adjusted to conform to the standardised O.E.C.D. classification of educational levels, so that a reasonable degree of international comparability should be possible.

Information regarding the educational attainment of populations, or of subsets of populations such as the active population or particular age groups, is not only of considerable background interest in many international analyses of the general development of nations, but also in a number of other more specific studies. Information on the educational attainment of the labour force has played a crucial role in growth accounting analyses of the type pioneered by E.F. Denison(2). These have attempted to estimate that part of the growth in national product which may be attributed to education through its contribution to output via a better-educated labour force. Other studies, utilising information on the distribution of the stock of educational capital in the labour force, have attempted to calculate the elasticities of substitution between different types of educated labour, the magnitude of which have important implications for methods of educational planning(3).

Another field in which data on attainment are potentially enlightening is in the analysis of inter-generational inequities. The increasing interest being shown in the concept of recurrent education, with one of its central emphases being on the improvement in the opportunities for education of those having left the regular system of education, demands more information on the educational status of various age groups in the population(4).

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(1) Manpower and Social Affairs Committee. Unpublished document MO(73)2. Part 2. OECD 1973.

(2) E.F. Denison, Why Growth Rates Differ, Brookings, Washington, D.C., 1967.

(3) See, for example, G. Psacharopoulos, Returns to Education, Elsevier, 1973.

(4) See for example, Recurrent Education: A Strategy for Lifelong Learning, CERI, O.E.C.D., Paris, 1973; "The phenomenon of a wide disparity between the young and the older generations in terms of the average years of schooling or the educational level they attain can be observed in all O.E.C.D. Member countries", (p.37).

The method of measuring the educational level of the population which is used here represents one of four basic alternatives: (a) the quantity of education may be expressed in simple terms of its duration (the present treatment could be modified to take account of variations in hours of schooling, variations in school holidays, truancy, incidence of homework, etc.); (b) the measure could be further refined to eliminate variations in quality of education over time or between countries (as measured by achievement tests or by qualifications obtained or by quality of educational inputs); (c) the value of the educational stock can be calculated at cost price (i.e. duration weighted by cost); or (d) in terms of its market value (i.e. duration weighted by earnings).

Measurement of the "quality" of education is extremely difficult, both over time and even more so between countries, though recent I.E.A. studies of cognitive achievement could help in this. However, the latter are available only for the secondary level.

It is possible to weight the data in some countries for variations in cost at different levels of education. But generally, cost data are poor both in respect of direct costs and earnings foregone.

Measures of the value of the educational stock based on earnings information can also be made but are more difficult than cost estimates because it is difficult to disentangle what part of earnings is really due to education.

Certain specific shortcomings of the measure used here should be noted. The data refer to years of regular schooling. Those aspects of educational training which undeniably contribute to the betterment of the knowledge and skills of individuals, and hence their productivity, such as on-the-job training, commercial courses and informal educational classes, are not included in the years of schooling reported in the censuses(1). The omission of these forms of education is regrettable because the little evidence there is suggests that they may make up a considerable proportion of the total educational stock(2).

Pre-primary education has been similarly ignored in the estimates, despite the fact that it is a significant part of the educational stock in some countries, such as France and Belgium. The census and survey data are in most cases ambiguous about which forms of higher education are included. Spain is the only country whose census clearly defines university-education and higher non-university education. Germany, Denmark and Norway also separate

(1) For a full discussion of these shortcomings with particular reference to the U.S.A. see J.K. Folger and C.B. Nam, Education of the American Population, U.S. Bureau of the Census, Washington, D.C., 1967, especially p.135 and appendix A.

(2) Jacob Mincer, in "On-the-Job Training: Costs, Returns and some Implications", Journal of Political Economy, Supplement, October 1962, presented estimates for the U.S.A. which suggested that annual human capital investment in general on-the-job training for the male U.S. labour force was roughly equivalent to that in formal education.

clearly universities and engineering schools, technical schools, teacher training schools etc. For the rest, except in Italy, Canada and Sweden, where non-university higher education is definitely excluded, there is no clear indication as to the coverage of the figures on higher educational experience.

A final, more technical, issue is that of possible biases arising in census and survey data through under-reporting and over-reporting of years of schooling. For the U.S.A. Folger and Nam(1) concluded that the net bias resulting from these two effects was probably very small and certainly not large enough to invalidate the analysis of attainment data. However, in Sweden, the authorities have decided that people aged 60 and over report their educational attainments too inaccurately to warrant asking them for the information.

A full description of the sources and detailed methods of estimation used in preparing tables 34-41 will appear in a forthcoming publication on the stock of human capital in O.E.C.D. Member countries.

(1) See Folger and Nam, Op.cit.

Table 34

Average Years of Formal Educational Experience of the Total Population aged 25-64 around 1970 by Level of Education

(latest census or survey data supplemented by estimates)

		Total years of Education Received	of which		
			Primary	Secondary	Higher
*Belgium[a]	1971	9.9	6.0	3.4	0.49
*Canada	1971	9.9	5.8	3.8	0.31[d]
*Denmark[a]	1971/2	9.4	5.0	4.1	0.36
France	1968	9.1	5.0	3.8	0.35
Germany	1970	9.2	4.0	5.1	0.18
Greece	1971	5.9	4.5	1.2	0.21
Ireland	1966	9.4	6.0	3.2	0.37
*Italy	1971	6.4	4.3	1.9	0.19[d]
Japan	1970	10.0	6.0	3.6	0.35
*Netherlands[b]	1970	8.6	6.0	2.3	0.35
*Norway[c]	1970	8.7	7.0	1.4	0.29
*Portugal	1970	3.6	2.5	1.0	0.15
Spain	1970	5.1	3.4	1.5	0.16
Sweden[b]	1967	8.3	6.0	2.0	0.31[d]
*U.K.	1971	10.2	6.0	3.9	0.23
U.S.A.	1970	11.1	5.8	4.5	0.76

a Age-group 20-59
b Active population
c Age-group 25-59
d Excludes non-university higher education
* Estimates

Table 35

Average Years of Formal Educational Experience of the Total Population aged 25-34 around 1970 by Level of Education

(latest census or survey data supplemented by estimates)

		Total years of Education Received	of which		
			Primary	Secondary	Higher
*Belgium[a]	1971	11.3	6.0	4.3	0.93
*Canada	1971	11.0	5.8	4.7	0.52[d]
*Denmark[a]	1971	10.2	5.0	4.5	0.64
France	1968	10.1	5.0	4.6	0.53
*Germany	1970	9.4	4.0	5.2	0.21
Greece[b]	1971	8.0	5.6	2.1	0.31
Ireland	1966	9.8	6.0	3.3	0.47
*Italy	1971	7.9	4.6	3.0	0.28[d]
Japan	1970	11.1	6.0	4.7	0.49
*Netherlands[c]	1970	9.7	6.0	3.1	0.54
*Norway	1970	9.6	7.0	2.1	0.51
*Portugal	1970	5.3	3.1	1.8	0.40
Spain	1970	5.6	3.6	1.8	0.21
Sweden	1967	9.6	6.0	3.0	0.53[b]
*U.K.[c]	1971	11.0	6.0	4.6	0.37
U.S.A.	1970	12.0	5.9	5.1	0.98

a Age-group 20-29
b Age-group 25-29
c Active population
d Excludes non-university higher education
* Estimates

Table 36

Average Years of Formal Educational Experience of the Total Population aged 65-74 around 1970 by level of education

(latest census or survey data supplemented by estimates)

		Total years of Education Received	of which		
			Primary	Secondary	Higher
Belgium[a]	1971	8.5	6.0	2.3	0.23
Canada	1971	8.1	5.4	2.5	0.10[d]
Denmark[a]	1971	8.6	5.0	3.4	0.12
France	1968	7.9	5.0	2.8	0.14
Germany[b]	1970	8.0	4.0	3.9	0.11
Greece[b]	1971	2.7	2.4	0.3	0.08
Ireland	1966	8.8	6.0	2.6	0.23
Italy	1971	4.6	3.6	1.0	0.09[d]
Japan[b]	1970	7.4	5.7	1.5	0.13
Netherlands[c]	1970	7.3	6.0	1.1	0.22
Norway[a]	1970	7.9	7.0	0.7	0.14
Portugal	1970	2.0	1.5	0.4	0.04
Spain	1970	3.6	2.6	0.9	0.09
Sweden[c]	1967	6.8	5.9	0.8	0.11[d]
U.K.[d]	1971	9.3	6.0	3.2	0.12
U.S.A.	1970	8.9	5.5	3.0	0.41

a Age-group 60-69
b Age-group 65 and over
c Active population
d Excludes non-university higher education

Table 37

Estimated Change in Average Per Capita Educational Attainment of the Population aged 25-64 between 1950-1960

		Average annual compound growth rate in:			
		Total	Primary	Secondary	Higher
Belgium a	1951-61	0.6	0.0	1.7	2.6
Canada	1951-61	0.6	0.3	1.2	1.1
Denmark	1951-61	0.3	0.0	0.4	1.1
France	1948-58	0.5	0.0	1.0	3.2
Greece	1951-61	2.2	1.7	4.2	5.2
Italy	1951-61	1.1	0.8	2.0	0.8
Japan	1950-60	1.1	0.2	3.0	3.2
Netherlands	1950-60	0.4	0.0	1.9	0.4
Norway b	1950-60	0.3	0.0	2.2	1.2
Portugal	1950-60	1.8	1.7	2.5	0.0
U.K. c	1951-61	0.3	0.0	0.6	2.1
U.S.A.	1950-60	0.8	0.3	1.4	2.7
Average		0.8	0.4	1.8	2.0

a Age group 20-59
b Age group 25-59
c Excluding Northern Ireland

Table 38

Estimated Change in Average Per Capita Educational Attainment of the Population aged 25-64 between 1960-1970

		Average annual compound growth rate in:			
		Total	Primary	Secondary	Higher
Belgium a	1961-71	0.8	0.0	1.8	4.7
Canada	1961-71	0.8	0.1	1.6	4.5
Denmark a	1961-71	0.5	0.0	0.8	6.1
France	1958-68	0.6	0.0	1.3	3.1
Germany	1960-70	0.5	0.0	0.9	2.5
Greece	1961-71	2.2	1.4	4.5	7.7
Ireland	1956-66	0.2	0.0	0.5	1.8
Italy	1961-71	1.4	0.6	3.2	3.9
Japan	1960-70	1.1	0.0	2.7	4.8
Netherlands	1960-70	0.7	0.0	2.4	2.7
Norway b	1960-70	0.6	0.0	3.3	4.9
Portugal	1960-70	2.8	1.7	6.1	11.6
Spain	1960-70	0.9	0.5	1.5	2.1
Sweden	1957-67	0.8	0.0	3.2	4.0
U.K. c	1961-71	0.4	0.0	0.9	3.1
U.S.A.	1960-70	0.9	0.2	1.5	3.1
Average		1.0	0.3	2.3	4.4

a Age group 20-59
b Age group 25-59
c Excluding Northern Ireland

Table 39

Estimated Change in Average Per Capita Educational Attainment of the Population aged 25-64 between 1970-1980

		Average annual compound growth rate in:			
		Total	Primary	Secondary	Higher
Belgium a	1971-81	0.9	0.0	1.6	4.8
Canada	1971-81	1.0	0.1	1.8	5.5
Denmark a	1971-81	0.6	0.0	0.8	4.9
France	1968-78	1.0	0.0	1.6	6.1
Germany	1970-80	0.2	0.0	0.1	4.1
Greece	1971-81	n.a.	1.1	4.9	n.a.
Italy	1971-81	1.6	0.5	3.6	3.6
Japan	1970-80	0.8	0.0	1.7	3.8
Netherlands	1970-80	1.0	0.0	2.7	3.7
Norway b	1970-80	1.2	0.0	4.4	8.2
Portugal	1970-80	3.2	1.6	5.2	10.3
Spain	1970-80	2.2	0.4	4.7	9.3
Sweden	1967-77	1.2	0.0	3.3	6.8
U.K. c	1971-81	0.6	0.0	1.1	4.9
U.S.A.	1970-80	0.9	0.0	0.9	5.6
Average		1.2	0.2	2.6	5.8

a Total 20-59
b Total 25-59
c Excluding Northern Ireland

Table 40

Average Years of Education Received by the Male Population aged 15 and over by Level of Education

		Total years of education received	of which		
			Primary	Secondary	Higher
Belgium a	1961	9.1	6.0	2.7	0.36
Canada b	1971	9.6	5.7	3.5	0.42[e]
Denmark	1961/2	9.3	5.0	4.1	0.22
France	1968	9.1	5.0	3.8	0.36
Germany b	1970	9.3	4.0	5.0	0.21
Greece	1971	6.6	4.9	1.4	0.25
Ireland	1966	9.1	6.0	2.8	0.32
Italy a	1961	6.0	4.2	1.7	0.17[e]
Japan	1970	10.3	6.0	3.9	0.45
Netherlands c	1960	7.9	6.0	1.6	0.21
Norway	1960	8.3	7.0	1.1	0.22
Portugal	1960	3.3	2.5	0.8	0.06
Spain	1970	5.4	3.5	1.6	0.25
Sweden[c,d]	1967	8.6	6.0	2.3	0.33[e]
U.K.	1961	9.8	6.0	3.6	0.18
U.S.A.	1970	10.7	5.8	4.2	0.72

a Aged 14 and over
b Total population having left school
c Active population aged 15-65
d Aged 15-64
e Excludes non-university higher education

Table 41

Average Years of Education of the Female Population Aged 15 and over by Level of Education

		Total years of education received	of which		
			Primary	Secondary	Higher
Belgium a	1961	8.7	6.0	2.5	0.15
Canada b	1971	9.5	5.7	3.6	0.21[e]
Denmark	1961/2	8.5	5.0	3.4	0.11
France	1968	8.8	5.0	3.6	0.19
Germany b	1970	8.7	4.0	4.6	0.07
Greece	1971	5.1	4.1	1.0	0.11
Ireland	1966	9.4	6.0	3.1	0.27
Italy a	1961	5.2	3.9	1.2	0.05[e]
Japan	1970	9.6	5.9	3.5	0.14
Netherlands c	1960	7.9	6.0	1.7	0.20
Norway	1960	7.9	7.0	0.8	0.07
Portugal	1960	2.5	2.0	0.5	0.02
Spain	1970	4.5	3.2	1.2	0.10
Sweden c,d	1967	8.4	6.0	2.2	0.21[e]
U.K.	1961	9.7	6.0	3.6	0.10
U.S.A.	1970	10.6	5.8	4.3	0.51

a Aged 14 and over
b Total population having left school
c Active population aged 15-65
d Aged 15-64
e Excludes non-university higher education

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